Date: Sun, 7 Nov 93 04:30:42 PST
From: Ham-Space Mailing List and Newsgroup <ham-space@ucsd.edu>
Errors-To: Ham-Space-Errors@UCSD.Edu
Reply-To: Ham-Space@UCSD.Edu
Precedence: Bulk
Subject: Ham-Space Digest V93 #78
To: Ham-Space

Ham-Space Digest   Sun, 7 Nov 93   Volume 93 : Issue   78

Today's Topics:

Send Replies or notes for publication to: <Ham-Space@UCSD.Edu>
Send subscription requests to: <Ham-Space-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Space Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-space".

Date: 5 Nov 1993 07:52:03 -0500
From: usc!math.ohio-state.edu!magnus.acs.ohio-state.edu!magnus.acs.ohio-state.EDU!
hcheyney@network.ucsd.edu
Subject: Mir
To: ham-space@ucsd.edu

Can anyone explain how to work Mir on Packet. I have monitored packets
periodically on 145.55. What is the uplink frequency ? What is the period of
the orbit ? I have seen transmissions at 93-100 min intervals but sometimes I
don't see anything for a few hours. It appears that you can call CQ using it
for a digipeater or post PBBS messages.

Any help would be appreciated.

Harold N8OCM

Date: 6 Nov 93 11:19:32 GMT
From: ogicse!hp-cv!sdd.hp.com!news.cs.indiana.edu!usenet.ucs.indiana.edu!

alwalsh@network.ucsd.edu
Subject: Oscar 21 Question
To: ham-space@ucsd.edu

In article <2bbgf4INNfj7@mickey.eng.gulfaero.com>,
John Gladin <gladin@gulfaero.com> wrote:
>I have just recently started listening in on Oscar21 passes on 145.983
>MHz. Could someone please explain the 'mode flipping' between QSOs,
>German, French, etc 'broadcasts', and packet? I'm trying to learn the
>ropes before attempting contacts and I do intend on reading up on the
>subject. However, I'm running long on curiosity and short on time for
>researching my new-found habit.
>
>Your help is appreciated.
>
>Regards,
>John KE4GHE
>

OSCAR 21 operates in three different modes during each ten minute cycle.
For the first 6 minutes it operates in mode B (70cm up, 2m down), essentially
as a repeater. For the next three minutes it broadcasts automated voice
messages in various langauges. The last minute is packet data. When you
get a chance, check out the excellent QST article on OSCAR 21 in the
December issue.

-Alan
KF9KQ

Date: Fri, 5 Nov 1993 15:56:32 MST
From: news.service.uci.edu!paris.ics.uci.edu!csulb.edu!library.ucla.edu!
news.mic.ucla.edu!unixg.ubc.ca!nntp.cs.ubc.ca!alberta!nebulus!ve6mgs!
usenet@network.ucsd.edu
Subject: Two-Line Orbital Element Set Format
To: ham-space@ucsd.edu

As a service to the satellite user community, the following description of the
NORAD two-line orbital element set format is uploaded to sci.space.news and
rec.radio.info on a monthly basis. The most current orbital elements
from the NORAD two-line element sets are carried on the Celestial BBS, (513)
427-0674, and are updated daily (when possible). Documentation and tracking
software are also available on this system. The Celestial BBS may be accessed
24 hours/day at 300, 1200, 2400, 4800, or 9600 bps using 8 data bits, 1 stop
bit, no parity. In addition, element sets (also updated daily) and some
documentation and software are also available via anonymous ftp from
archive.afit.af.mil (129.92.1.66) in the directory pub/space.

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================================================================================
```

Data for each satellite consists of three lines in the following format:

```
AAAAAAAAAAA
1 NNNNNU NNNNNAAA NNNNN.NNNNNNNN +.NNNNNNNN +NNNNN-N +NNNNN-N N NNNNN
2 NNNNN NNN.NNNN NNN.NNNN NNNNNNN NNN.NNNN NNN.NNNN NN.NNNNNNNNNNNNN
```

Line 0 is a eleven-character name.

Lines 1 and 2 are the standard Two-Line Orbital Element Set Format identical to that used by NORAD and NASA. The format description is:

Line 1 Column	Description
01-01	Line Number of Element Data
03-07	Satellite Number
10-11	International Designator (Last two digits of launch year)
12-14	International Designator (Launch number of the year)
15-17	International Designator (Piece of launch)
19-20	Epoch Year (Last two digits of year)
21-32	Epoch (Julian Day and fractional portion of the day)
34-43	First Time Derivative of the Mean Motion or Ballistic Coefficient (Depending on ephemeris type)
45-52	Second Time Derivative of Mean Motion (decimal point assumed; blank if N/A)
54-61	BSTAR drag term if GP4 general perturbation theory was used. Otherwise, radiation pressure coefficient. (Decimal point assumed)
63-63	Ephemeris type
65-68	Element number
69-69	Check Sum (Modulo 10) (Letters, blanks, periods, plus signs = 0; minus signs = 1)

Line 2 Column	Description
01-01	Line Number of Element Data
03-07	Satellite Number
09-16	Inclination [Degrees]
18-25	Right Ascension of the Ascending Node [Degrees]
27-33	Eccentricity (decimal point assumed)
35-42	Argument of Perigee [Degrees]
44-51	Mean Anomaly [Degrees]
53-63	Mean Motion [Revs per day]
64-68	Revolution number at epoch [Revs]
69-69	Check Sum (Modulo 10)

All other columns are blank or fixed.

Example:

```
NOAA 6
1 11416U          86 50.28438588 0.00000140           67960-4 0  5293
2 11416  98.5105  69.3305 0012788  63.2828 296.9658 14.24899292346978
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End of Ham-Space Digest V93 #78
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